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Amendments to SpecificationPage 1, line 17 to page 2, line 2

In U.S. patent 6,596,426 a procedure is set forth to remove all of the water from the water transport plates and from the electrode substrates. This, of course, is deemed favorable to prevent damage from ice. In U.S. patent application Serial No. 10/390,439 filed March 17, 2003 (now U.S. Patent No. 6,703,870), that procedure is endorsed as desirable since it leaves the hydrophilic substrates of the electrode support plates empty, thereby being available to store newly-generated product water. In that application, the starting up and running of a fuel cell driving an electrical load is said to be possible for several minutes; however, depending upon all of the attendant conditions, there may be local overheating due to an inadequate cooling capability and membrane dry out.

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Upon shutdown, however, the pressure levels in the reactant gas flow fields 38, 48 go substantially to ambient pressure, and the pressure of the coolant medium similarly moves to slightly below ambient pressure. The coolant flow field 36 may have been operating at a small suction less than ambient pressure, and that pressure is regulated during shutdown to achieve the desired rate of flooding, or saturation, of the substrates 22, 26. The new pressure differential,  $\Delta P_2$  of the coolant flow field relative to the reactant flow fields is then such as will allow coolant to readily move into substrates 22, 26. This results in the condition depicted in Fig. 3, in which coolant, represented by arrows 90, rapidly migrates through the projections 42 of the flow field plates 12, 14 and floods both wettable substrates 22, 26. The pressure differential  $\Delta P_2$  need only be a relatively small amount less than the 2 to 3 psi pressure differential  $\Delta P_1$  in order for coolant to migrate into the wettable substrates 22, 26. For instance, if the pressure of the coolant is greater than, or substantially equal to, or even about 7 kPa (1 psi) less

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than the pressure of the reactant fields, the coolant will migrate into the wettable substrates 22, 26 and ~~floor~~ fill approximately 50% of the void volume of the substrates.